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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/586,534	Applicant(s) NOMURA, TAKASHI
	Examiner YU ZHAO	Art Unit 2169

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on October 26, 2011.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) Claim(s) 1-13 is/are pending in the application.
- 5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) Claim(s) _____ is/are allowed.
- 7) Claim(s) 1-13 is/are rejected.
- 8) Claim(s) _____ is/are objected to.
- 9) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 10) The specification is objected to by the Examiner.
- 11) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08) _____
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

Response to Amendment

1. Acknowledgment is made of applicant's argument filed on **October 26, 2011**.

Claims 1-13 are presented for examination.

35 USC 112 Rejection is withdrawn.

Response to Argument

2. In view of the advisory filed on **October 26, 2011**, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

/Tony Mahmoudi/

Supervisory Patent Examiner, Art Unit 2169

Applicant representative argued that, "In rejecting claim 1, the Office Action maintains that Lomet discloses the recited non-tree index at col. 13, lines 26-34. The Applicant respectfully disagrees. This passage merely describes a disk storage management method that allocates a "buddy" for each storage block (col. 12, lines 53-55). Lomet maintains a free list for each size of available storage blocks, and searches the free list with the appropriate size blocks (col. 13, lines 24-28). Lomet discloses that either a sequential search or a binary digital tree search can be used to search the free list (col. 13, lines 28-31). However, this free list is unrelated to the recited initial substance data and the update substance data. This free list is also unrelated to the structure of the key accessed file of Lomet described above."

Examiner respectfully disagrees. The instant invention discloses using non-tree index in update search data instead of tree-index. The reason is because, when there are only few update search data in the update database, it is not worth the time and effort to create the tree. Lomet discloses such motivation and method. Lomet discloses if there are only few records, it will do sequential search (non-tree index). If there are many records, it will build a binary tree index and then search the records (Lomet: column 13, lines 17-34, "...For this reason, all bookkeeping required by the method is fully separate from the storage being managed so that it can be kept in main memory...If these lists **are very short**, a sequential search should be adequate. Should the lists be somewhat **longer**, a binary digital tree (trie) can be used to locate the buddy...").

Lomet discloses storing a list of records of free blocks (e.g. each record is a row in the list, each row contains the information of free block, such as size and location of the block which are fields of the record). Under the broadest reasonable interpretation, each update search data is broadly interpreted as the "record" in free list, where "list" (e.g. index list) shows the data structure is non-tree structure.

Allowable Subject Matter

3. **Claims 8 and 9** are objected to as being dependent upon a rejected base claim, but would be allowable if both Claims 8 and 9 rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (U.S. Pub. No.: US 2002/0013658 A1, hereinafter, Tanaka), in view of Cheng et al. (U.S. Pub. No.: US 5,204,958 A1, hereinafter Cheng) and further in view of Lomet (U.S. Patent No.: 4,611,272).

Claim 1 is rejected as substantially similar as claim 3, for the similar reasons.

For claim 3, Tanaka discloses a search data update system, comprising: a navigation apparatus that uses search data (Tanaka: paragraph [0007], "to provide a navigation system, in which registered locations input by users can be made a subject of an alphabet-based search", paragraph [0008], "to provide a navigation system, in which registered locations input by users can be made a subject of a facility search or a surroundings search based on a facility type-based search."); **and**

a search data providing apparatus that provides update search data to the navigation apparatus to be used to update initial search data (Tanaka: page 2, paragraph [0035]), **wherein:**

the navigation apparatus includes a storage device at which the initial search data constituted with search tree data having a tree structure and a plurality of sets of initial substance data each specified based upon the search tree data are stored, and an update data obtaining device that obtains the update search data from the search data providing apparatus, wherein the initial substance data include facility information (Tanaka: page 1, paragraph [0003], "In a navigation system...location names of various facilities are preliminarily stored as a search list and a target location is searched from an input location name by the use of the search list. This search is conducted alphabetically in Japanese 50-alphabet system...", paragraph [0009], "...has a rewritable memory which originally stores data of a plurality of locations...the navigation system registers and stores data of the new location in the *rewritable memory* in addition to the data of the plurality of locations...", page 2, paragraph [0029], "...retrieving the map data from a *map data memory medium*...", paragraph [0032], "...For registering the new location...This specified location is registered as a *memory location*...", paragraph [0038], "a *memory location* is registered in a search list separate from an original search list, which pre-stores names of locations such as facilities, in place of updating an original search list (first embodiment)");

the update search data are provided in units of individual sets of update substance data, wherein the update substance data include attached thereto search key information to be used in a search in correspondence to each set of update substance data, and include facility information (Tanaka: page 2, paragraph [0032], "A new location is registered ...This specified location is registered as a memory location." paragraph [0038], "a *memory location* is registered in a search list separate from an original search list, which pre-stores names of locations such as facilities, in place of updating an original search list (first embodiment)", page 3, paragraph [0047], "retrieves at step 501 the data of name, area and facility type of the new location specified by the user as well as the location data such a coordinate specified by the cursor. The control unit 8 then updates the search list a step 502 with those new retrieved data.", page 3, paragraph [0044], "The surrounding location may be limited to be within a fixed radius from the specified location.", ., page 2, paragraph [0039], "...the control unit 8 then forms a new search list...**separately** from the original search list");

upon obtaining the update search data from the search data providing apparatus, the update data obtaining device stores the obtained update search data into the storage device separately from the initial search data (Tanaka: page 1, paragraph [0009], "a navigation system has a rewritable memory

which originally stores data of a plurality of locations. When a user inputs a new location other than the plurality of locations, the navigation system registers and stores data of the new location in the rewritable memory in addition to the data of the plurality of locations.", page 2, paragraphs [0033]-[0040], "...The control unit 8 retrieves the name and data of the registered location at step 301 in the similar manner as at step 101 (FIG. 3). The control unit 8 then **forms a new search list** at step 302 to add the name of the memory location **separately from the original search list**. Specifically, as shown in FIG. 7B..."); and

the navigation apparatus further includes a search device that executes a substance data search by using both the search tree data the initial search data stored in the storage device to execute a tree-based search and using the non-tree index attached to each set of update substance data of the update search data stored in the storage device to conduct an index-based search, in correspondence to input of a character for search (Tanaka: page 1, paragraph [0009], page 2, paragraph [0032], "A new location is registered by the control unit 8 as shown in FIG. 3. For registering the new location", paragraph [0033], "The control unit 8 retrieves the name and data of the registered location at step 101." page 2, paragraphs [0033]-[0040], "...The control unit 8...searches for the target

location..by using both the original (normal) search list and the new search list. In this instance, the search may first be conducted by referring to either one of the original list and the new list...", where "information to be used" can be broadly interpreted as ANY information and data: e.g. search tree data).

However, Tanaka does not explicitly disclose the update search data are provided in units of individual sets of update substance data, wherein the update substance data are provided without any search tree data include attached thereto a non-tree index as a search key information to be used without any search tree data, and using the non-tree index attached to each set of update substance data of the update search data stored in the storage device to conduct an index-based search, in correspondence to input of a character for search.

Cheng discloses the update search data are provided in units of individual sets of update substance data, wherein the update substance data are provided without any search tree data include attached thereto a non-tree index as a search key information to be used(Cheng: column 4, lines 46-52, "...A key value is the value being used to index a set of records, and is typically a combination of the first couple of fields in the record.", column 6, lines 48-59, "...Whenever a new data record is received, it is stored in secondary memory in the sequential data file 130 (step 300). This is called a "sequential" data file because new records are always written to the end of the

file in a temporal order, regardless of their index value..." column 6, line 60-68, "After a number of records are stored in secondary memory file 130, a block of these records are read, and corresponding indexed pointer are created and temporarily stored in primary memory in the index file 148 (step 302), herein called the small B-tree (SBT) 148..." column 11, line 64- column 12, line 8),

Cheng also discloses and using the non-tree index attached to each set of update substance data of the update search data stored in the storage device to conduct an index-based search (Cheng: column 4, lines 46-52, "...A key value is the value being used to index a set of records, and is typically a combination of the first couple of fields in the record." column 6, lines 48-59, column 6, line 60-68, "After a number of records are stored in secondary memory file 130, a block of these records are read, and corresponding indexed pointer are created and temporarily stored in primary memory in the index file 148 (step 302), herein called the small B-tree (SBT) 148..." column 10, lines 9-21, "Whenever any type of matching operation is performed on the database, typically to read a specified set of records, the system must perform a matching range search of both the SBT 148 (and SBT 150 if two SBT's are being used) and the LBT 132...the indexed search is complete if it located the desired value in the SBT 148. In cases where the most frequent searches are to

recently inserted records, this will mean that the memory resident B-tree SBT 148 fulfills a valuable buffering function.")

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Navigation system and method capable of registering new locations" as taught by Tanaka by implementing "System and method for efficiently indexing and storing a large database with high data insertion frequency" as taught by Cheng, because it would provide Tanaka, Tanaka's system with the enhanced capability of "The SBT 150 is a B-tree, much like the one shown in FIG. 2. Since the indexed pointers for new records are stored in primary memory, the generation and storage of such indexed pointers is very fast, and incurs no costs with respect to usage of secondary memory."

(Cheng: column 7, lines 1-6).

However, Tanaka and Cheng do not explicitly disclose wherein the data are provided without any search tree data include attached thereto a non-tree index as a search key information to be used without any search tree data in a search in correspondence to each set of update substance data,

Lomet discloses wherein the update substance data are provided without any search tree data include attached thereto a non-tree index as a search key information to be used without any search tree data in a search in correspondence to each set of update substance data (Lomet: column 13, lines 26-34, "...Because of the short free lists for each size of available

block, finding a buddy is readily accomplished by simply searching the free list with the appropriate size blocks. If these lists are very short, a sequential search should be adequate. Should the lists be somewhat longer, a binary digital tree (trie) can be used to locate the buddy. In either case, the technique needed is straightforward. The detailed algorithms and data representations required are well known.").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Navigation system and method capable of registering new locations" as taught by Tanaka by implementing "Key-accessed file organization" as taught by Lomet, because it would provide Tanaka Cheng's modified system with the enhanced capability of "...by simply searching the free list with the appropriate size blocks. If these lists are very short, a sequential search should be adequate." (Lomet: column 13, lines 26-34)

Claim 13 is rejected as substantially similar as claim 3, for the similar reasons.

For claim 2, Tanaka discloses an modified update method performed by a server and a control device of a navigation apparatus for updating search data used in a navigation apparatus according to claim 1, further comprising:

storing, by the control devices, the second substance data having the non-tree index as the update data in the navigation apparatus separately from the initial search data (Tanaka: page 1, paragraph [0009], "...originally stores data

of a plurality of locations. When a user inputs a new location other than the plurality of locations, the navigation system registers and stores data of the new location in the rewritable memory in addition to the data of the plurality of locations...”, page 3, paragraph [0047], “retrieves at step 501 the data of name, area and facility type of the new location specified by the user as well as the location data such a coordinate specified by the cursor. The control unit 8 then updates the search list a step 502 with those new retrieved data.”, page 2, paragraphs [0033]-[0040]).

For claim 4, Tanaka discloses a modified search data update system according to claim 3, wherein:

upon obtaining new update search data, the update data obtaining device in the navigation apparatus sorts entire update search data including the new update search data and the update search data already stored in the storage device based upon the non-tree index to be used in a search and stores the sorted update search data in the storage device (Tanaka: page 1, paragraphs [0009], [0010], page 2, paragraph [0031], “...search list is stored in the form of search tree so that the target location is searched for in the Japanese alphabetical order...”, paragraph [0035], “searches for the target location from the input location name at step 202 by using the *updated search list*.”, paragraph [0039], where “second storage device” is read on “rewritable memory”).

For claim 5, Tanaka discloses a modified search data update system according to claim 3 wherein:

the navigation apparatus further includes a control device that executes navigation processing including route search and route guidance by using the initial or update substance data obtained via the search device (Tanaka: page 1, paragraphs [0003], [0004], page 2, paragraph [0030]).

For claim 11, Tanaka discloses a modified navigation apparatus in a search data update system according to claim 3 (Tanaka: page 1, paragraph [0007], page 2, paragraphs [0029]-[0030]).

For claim 12, Tanaka discloses a modified search data providing apparatus in a search data update system according to claim 3 (Tanaka: page 2, paragraphs [0029]-[0030]).

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (U.S. Pub. No.: US 2002/0013658 A1, hereinafter, Tanaka), in view of Cheng et al. (U.S. Pub. No.: US 5,204,958 A1, hereinafter Cheng) and further in view of Lomet (U.S. Patent No.: 4,611,272) and further in view of Miyahara (U.S. Pub. No.: U.S. 2003/0028316).

For claim 10, Tanaka discloses a modified search data update system according to claim 3.

However, Tanaka does not explicitly disclose wherein: the update data obtaining device in the navigation apparatus transmits to the search data providing apparatus information related to a version of the update data stored in the second storage device;

and if a newer version of update substance data than the version indicated in the received information is available, the search data providing apparatus provides the update search data corresponding to the newer version of the update substance data to the navigation apparatus.

Miyahara discloses wherein: the update data obtaining device in the navigation apparatus transmits to the search data providing apparatus information related to a version of the update data stored in the second storage device (Miyahara: page 6, paragraphs [0096] and [0097]); **and if a newer version of update substance data than the version indicated in the received information is available, the search data providing apparatus provides the update search data corresponding to the newer version of the update substance data to the navigation apparatus** (Miyahara: page 6, paragraphs [0096]-[0098]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Navigation system and method capable of registering new locations" as taught by Tanaka by implementing "Satellite navigation system of which map data are partially updateable" as taught by Miyahara, because it would provide Tanaka's system with the enhanced capability of "to greatly reduce an amount of data to be re-loaded when map data is updated." (Miyahara: page 1, paragraph [0010]).

6. **Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (U.S. Pub. No.: US 2002/0013658 A1, hereinafter, Tanaka), in view of Cheng et al. (U.S. Pub. No.: US 5,204,958 A1, hereinafter Cheng) and**

further in view of Lomet (U.S. Patent No.: 4,611,272) and further in view of Miyahara (U.S. Pub. No.: U.S. 2003/0028316), and further in view of Saito et al. (U.S. Pub. No.: US 2003/0140309 A1, hereinafter, Saito).

For claim 6, Tanaka discloses a modified search data update system according to any claim 3.

However, Tanaka does not explicitly disclose wherein: once a number of sets of update search data having been obtained becomes equal to or greater than a predetermined value, the update data obtaining device in the navigation apparatus provides an audio output or a display output notifying that the number of sets of update search data is equal to or greater than the predetermined value.

Miyahara discloses wherein: once a number of sets of update search data having been obtained becomes equal to or greater than a predetermined value, the update search data obtaining device in the navigation apparatus that the number of sets of update data is equal to or greater than the predetermined value (Miyahara: page 6, paragraphs [0096]-[0098]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Navigation system and method capable of registering new locations" as taught by Tanaka by implementing "Satellite navigation system of which map data are partially updateable" as taught by Miyahara, because it would provide Tanaka's modified system with the enhanced capability of "to greatly reduce an amount of data

to be re-loaded when map data is updated." (Miyahara: page 1, paragraph [0010]).

However, Tanaka, Cheng and Lomet do not explicitly disclose providing an audio output or a display output notifying that the number of sets of update data is equal to or greater than the predetermined value.

Saito discloses providing an audio output or a display output notifying
(Saito: pages 11-12, paragraph [0203]-[0206]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Navigation system and method capable of registering new locations" as taught by Tanaka by implementing "Information processing apparatus, information processing method, storage medium, and program" as taught by Saito, because it would provide Tanaka's modified system with the enhanced capability of "for the user to update the database at any time desired." (Saito: page 11, paragraph [0201]).

Claim 7 is rejected as substantially similar as claim 6, for the similar reasons.

Further, Tanaka discloses obtains a new version of initial search data comprising new search tree data and a new plurality of sets of initial substance data containing update substance data in the update search data search specified based upon the new search tree data and stores the new version of initial search data thus obtained into the storage device. (Tanaka: Fig. 4).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YU ZHAO whose telephone number is (571)270-3427. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tony Mahmoudi can be reached on (571) 272-4078. The fax phone number for the organization where this application or proceeding is assigned is 571-270-4427.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Date: 11/9/2011

/Yu Zhao/

Examiner, Art Unit 2169

/Tony Mahmoudi/

Supervisory Patent Examiner, Art Unit 2169